



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,972	08/08/2001	Kiyotaka Ogura	381NT/49741	3582

23911 7590 09/04/2003

CROWELL & MORING LLP  
INTELLECTUAL PROPERTY GROUP  
P.O. BOX 14300  
WASHINGTON, DC 20044-4300

EXAMINER

BUI, THACH H

ART UNIT	PAPER NUMBER
----------	--------------

3752

DATE MAILED: 09/04/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/763,972

Applicant(s)

OGURA ET AL.

Examiner

Thach H Bui

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The preliminary amendment filed June 10, 2001 has been received and entered.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-11, 13-14 and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Okamoto et al. (U.S. Patent No. 6,367,720).

Okamoto et al. teach an electronic fuel injector comprising a hollow fixed core, an electromagnetic coil (16) and a yoke (i.e. covering the electromagnetic core) (3). The injector includes a valve element (1, 4A) contained in a nozzle body fixed to the lower portion of the yoke and the needle valve is urged toward a valve seat (10) by the force of a return spring (14). Okamoto et al. teach a fuel swirler (a separate member having

Art Unit: 3752

passage groove) (13) (col. 5, lines 26-37) disposed at the tip of the nozzle body and a non-magnetic cylindrical seal ring pressed-fitted (6). The inner circumference of the fuel swirler and the inner circumference of the seal ring functions as a guide for slidably guiding stroke movement of the needle valve (see Fig. 1). The fuel swirler is loosely fitted to the inner circumference of the nozzle body in such a manner as to be received at the receiving surface of the nozzle body (see Fig. 2). The fuel injector comprises a guide groove formed at the upper surface of the fuel swirler and/or the receiving surface of the nozzle body (see Fig. 2). The fuel injector comprises a yoke and a seal ring with a flange (as mentioned above) of which are pressed-fitted e.g. spigot joint manner and welded and/or caulked to the fixed core of the injector (see Fig.1). Okamoto et al. also disclose a terminal taking-out window (20) for the electromagnetic coil is formed at a part of the upper portion of the yoke (see Fig. 1). The apparatus includes a fuel passage communicates with another fuel passage defined inside of the movable core (circumferential difference between the upper and the lower portion, see Fig. 1) via a through hole (7B).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3752

3. Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto et al.

Okamoto et al. have all the features of the invention but Okamoto et al. failed to teach the hardness of the fuel swirler is greater than that of the orifice plate. It would have been obvious to one having ordinary skills in the art at the time the invention was made to modify the teachings of Okamoto et al. to have a fuel injector with the hardness of the fuel swirler is greater than that of the orifice plate to accommodate the swirling force of injected fuel.

4. Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto et al. in view of Fukutomi et al. (U.S. Patent No. 5,871,157).

Okamoto et al. have all the features of the invention (as mentioned above) but Okamoto et al. failed to teach the annular steps formed at the peripheral edge of the fuel swirler. Fukutomi et al. teach the annular steps formed at the peripheral edge of the fuel swirler (13) (see Fig. 6a). It would have been obvious to one having ordinary skills in the art at the time the invention was made to have the annular steps formed at the peripheral edge of the fuel swirler to create an efficient swirling force.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mesenich, Kaska, Reiter et al., Tsuchiya et al., and Munezane et al. are cited of general interest.

Application/Control Number: 09/763,972  
Art Unit: 3752

Page 5

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thach H Bui whose telephone number is 703-305-0063. The examiner can normally be reached on Monday-Friday, 7:30-4 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mar can be reached on 703-308-2087. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

T.B.  
08/26/03



**MICHAEL MAR**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 3700**